Amendments to the Specification

1. Replace the paragraph starting on page 9, line 22 and concluding on page 10, line 9, with the following:

Electromagnet components 28, each having a coil core 32 bearing a coil winding 30 consisting of one or more conductors, are disposed on the inner wall of the peripheral housing wall 16 - likewise at uniform angular spacings. The ends of the conductors of the coil winding 30 are connected to an electronic control device by which the electric current delivered to the control device from an electric current source is fed into the coils 30 in a controlled manner in such a way that in the electromagnet components 28 a magnetic rotating field is generated which in interaction with the permanent magnets 27 disposed in the armature discs 26a, 26b results in a relative rotation of the rotor and thus of the shaft 24 with respect to the housing 12. Thus in conjunction with the aforementioned electronic control - not shown - the electric machine according to Figure 1 constitutes a brushless electric axial field motor which can be driven by a direct current source. When conversely the shaft 24 is driven, an electric rotating field is generated by the permanent magnets 27 in the electromagnet components 28 rotating with the armature discs (26a, 26b), and this field can be tapped at the ends of the coils 30 of the electromagnet components 28 and used as direct current by a suitable rectifying circuit. The electric rotating field can alternatively be converted into rotating or alternating current by corresponding electronic control means 52, such as shown in Figure 6. Referring to Figures 1 and 6, in a preferred embodiment, a position pick-up 50, as is well known in the art and which senses the

relative rotational position of the rotor in the housing 12, is associated with the control means 52 for initiating the switching over of the polarity of the electromagnet components 28.

2. Replace the paragraph on page 11, lines 8-19 with the following:

The shaft 24 bears - as mentioned - the rotor which is retained non-rotatably on it and is also shown separately in Figures 4 and 5, this rotor having the two armature discs 26a, 26b made from non-magnetic material which are spaced from one another and extend radially into the vicinity of the peripheral housing wall 16 and in which are disposed the permanent magnets 27 which succeed one another in the peripheral direction and are held at uniform angular spacings, and in fact in the present case there are twelve permanent magnets in all, of which the pole faces 27c which face inwards, i.e. towards the respective opposing armature disc 26b, 26a have polarities which are successively reversed in the peripheral direction. Also the pole faces, which lie opposite in the axial direction, of the permanent magnets 27 of the two armature discs 26a, 26b have different polarities. In the illustrated embodiment each pole face of a permanent magnet extends in the peripheral direction over two pole faces 32a of the coil cores 32 of electromagnet components which succeed one another in the peripheral direction.

3. Replace the paragraph starting on page 12, line 1 and concluding on page 13, line 2 with the following:

The armature discs 26a, 26b are each disposed on the outer end surfaces of a hub body 36 (Figures 4 and 5) from which radial walls 38 protrude into the space between the armature discs 26a, 26b, the radial extent thereof being chosen such that

the electromagnet components 28 protruding radially inwards from the peripheral housing wall 16 can still enter radially into the space between the armature discs 26a, 26b without butting against the radially outer ends of the radial walls 38 projecting from the hub body 36. Between each pair of radial walls 38 of the hub body 36 which succeed one another in the peripheral direction there are additionally provided radial walls 38' which are fixed on the inner faces of the armature discs 26a, 26b which face one another, so that a row of chambers 40 is formed which succeed one another in the peripheral direction, these chambers being closed off internally by the hub body 36 and laterally by the armature discs 26a, 26b respectively. Immediately above the hub body 36 inner holes 46 which lead into the chambers 40 are provided in both armature discs 26a and 26b. Thus with the rotor rotating air can pass via the holes 46 out of the interior of the housing and into the chamber 40 and is accelerated radially outwards there by the centrifugal force of the rotating rotor. This air flowing radially outwards then leaves the chambers 40 and encounters the electromagnet components projecting from the peripheral wall 16 of the housing 12 into the space between the armature discs 26a, 26b and passes through the spaces between these components, flows around them and can then pass beyond the peripheral surface of the armature discs again and into the space between armature discs 26a, 26b and the housing end walls 14a, 14b. Thus the rotor formed by the hub body, the radial walls 38 and 38' and the armature discs 26a, 26b simultaneously constitute the impeller of a fan which effects a forced circulating flow of the air enclosed in the housing or - in special cases - of a gas filling introduced there. As soon as the temperature in the forced circulating flow rises above the ambient temperature, heat is removed via the housing, i.e. the

peripheral housing wall 16, ~~and~~ the housing end walls 14a and 14b and ribs 13a on the outer surfaces of the housing walls 14a and 14b, to the external atmosphere. The provision of ribs on the surfaces of the housing promotes not only the transfer of heat from the forced circulating flow in the interior of the housing to the housing but also the emission of heat from the housing to the surrounding atmosphere. In a preferred embodiment, radially extending ribs 13b are provided on the inner faces of the housing end walls 14a, 14b facing the rotor and between these ribs radial channels 13c are formed for the return of the gaseous atmosphere 13d circulated in the interior of the housing. In still another preferred embodiment, the radial channels 13c are closed off on the armature disc side by a metal plate 15 so that, between the radial walls 38, 38', the channels 13c are produced which are open only on a radially inner end 17a and a radially outer end 17b and are connected to the interior of the housing and through which the circulated air is returned.

In a further preferred embodiment, instead ~~Instead~~ of the forced circulating flow in the interior of the housing, cooling with external air can also take place if air inlets are provided in the housing end walls 14a and 14b approximately in alignment with the holes 46 in the armature discs 26a, 26b and outlet openings are provided in the peripheral housing wall 16 in the region between the electromagnet components 28.

4. Replace the paragraph on page 13, lines 3-10 with the following:

Figure 6 shows schematically the circuit of an electromagnetic component 28 of a special construction of the electromagnet components in which the coil core bears two coil windings 30a and 30b which are wound in opposing winding directions one above the other. It can be seen that the ends of the two coil windings 30a, 30b are connected

to the same current conductor, whilst the other ends of the two coil windings are each connected to separate conductors leading to an electronic control unit EC 52 by means of which the second current conductor can be selectively switched to the first coil winding 30a or the second coil winding 30b.

5. Add the following paragraph immediately after line 15 on page 13:

Referring again to Figure 6, in a preferred embodiment, the ends of the electrical conductors of each electromagnet component 28 which form the coil winding 30 are connected to the input connections of a separate rectifying circuit 54, which is integrated in the EC 52 as known in the art and is connected on the output side to a pair of electric bus lines. In a still further preferred embodiment, an electronic inverter circuit 56, which is integrated in the EC 52 also as known in the art, is connected downstream of the generator in order to convert the generated direct current into an alternating or three-phase current which is synchronized with the power supply.